

OEP

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Multiple Choice Questions- Power system Protection- Booklet 1



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1. Relay number 50 (Relay Device Number 50) What is a relay?

Answer 1: Undervoltage Relay

Answer 2: Instantaneous Overcurrent Relay

Answer 3: AC Time Overcurrent Relay

Answer 4: Frequency Relay

1

2. Which is not the method of detecting faults in the relay power system?

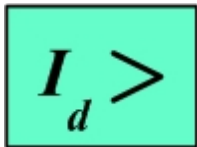
Answer 1: Level Detection

Answer 2: Differential Current Comparison

Answer 3: Phase Angle Comparison

Answer 4: Comparison of current flow velocity when shortening

3. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown, is



Answer 1: Negative Sequence Relay

Answer 2: Differential Relay

Answer 3: Definite Time Earth Fault Overcurrent Relay

Answer 4: Directional Overcurrent Relay

4. We have Non-Directional Overcurrent Relay, how we will detect faults any direction

Answer 1: Level measurement

Answer 2: Comparison of phase angle

Answer 3: Comparison of power size

Answer 4: Comparison of current differences

5. Under Voltage Relay uses the method of detecting faults

Answer 1: Comparison of phase angle

Answer 2: Comparison of current differences

Answer 3: Comparison of power size

Answer 4: Level measurement

6. What is the pick-up value of the relay?

Answer 1: The setting for the relay to stop working

Answer 2: Adjustment settings to compensate for the performance of the relay.

Answer 3: Setting up the relay to start

Answer 4: Adjusting multipliers to accelerate relays to help reduce damage.

7. Which of the following not related to Distance Relay?

Answer 1: Quadrilateral

Answer 2: Lenticular

Answer 3: Mho

Answer 4: High Impedance Relay

8. Which of the following relays uses the Faults detection method in the electrical system with the Magnitude Comparison?

Answer 1: Directional Overcurrent Relay

Answer 2: Distance Relay

Answer 3: Current Balance Relay

Answer 4: Differential Relay

9. Which quantity from mention below quantities to be compared for phase angle comparison.

Answer 1: Current and voltage.

Answer 2: Current and Current.

Answer 3: Power and Voltage.

Answer 4: Negative Sequence and Positive Sequence when the Fault occurs.

10. Which of the following types of relays detect faults by using the Phase Angle Comparison method?

Answer 1: Differential Relay

Answer 2: Directional Overcurrent Relay

Answer 3: Frequency Relay

Answer 4: Current Balance Relay

11. Which of the following mentioned statement about Electromagnetic Relays is wrong?

Answer 1: Electromagnetic Induction Relay relies on electromagnetic attraction to force relay contact to change status.

Answer 2: Electromechanical Relay relies on gravitational force or mechanical electrical torque to operational at time of fault and testing

Answer 3: Electromagnetic Attraction Relay will work immediately. (Instantaneous) without delay

Answer 4: Electromechanical Relay is an old relay. That cannot save any electrical data

12. Which is not a feature of Digital Relay

Answer 1: Multiphase Multifunction Relay

Answer 2: Can record events or statistical data of fault occurrences in the system.

Answer 3: Can measure and display the electrical quantity value of the system, such as voltage, watt, volt amperage, etc.

Answer 4: Single Phase / Single Function Relay

13. Which of the following types of relays Based on the principle of using both the amount of current and pressure to encourage the relay to work?

Answer 1: Distance Relay (Distance Relay)

Answer 2: Current Differential Relay

Answer 3: Low frequency detection relay (Underfrequency Relay)

Answer 4: Direct current overload relay (Non-Directional Overcurrent Relay)

14. Number 87 relay according to ANSI Standard represents

Answer 1: Instantaneous Overcurrent Relay

Answer 2: Distance Relay

Answer 3: Differential Protective Relay

Answer 4: Reverse-Phase or Phase-Balance Current Relay

15. Number 21 relay according to ANSI Standard represents

Answer 1: Instantaneous Overcurrent Relay

Answer 2: Distance Relay

Answer 3: Differential Protective Relay

Answer 4: Reverse-Phase or Phase-Balance Current Relay

16. Number 50 relay according to ANSI Standard represents

Answer 1: Instantaneous Overcurrent Relay

Answer 2: Distance Relay

Answer 3: Differential Protective Relay

Answer 4: AC Time Overcurrent Relay

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17. Number 51 relay according to ANSI Standard represents

Answer 1: Ground Protective Relay

Answer 2: AC Time Overcurrent Relay

Answer 3: Reverse-Phase or Phase-Balance Current Relay

Answer 4: Instantaneous Overcurrent Relay

18. Number 67 relay according to ANSI Standard represents

Answer 1: AC Time Overcurrent Relay

Answer 2: Reverse-Phase or Phase-Balance Current Relay

Answer 3: Ground Protective Relay

Answer 4: AC Directional Overcurrent Relay

19. Number 49 relay according to ANSI Standard represents

Answer 1: Thermal Relay

Answer 2: Under Voltage Relay

Answer 3: Instantaneous Overcurrent Relay

Answer 4: Ground Protective Relay

20. What is the Fault Detection principle of the relay?

Answer 1: The relay works when the amount of electricity in the system is higher than the set level.

Answer 2: The relay works when the amount of electricity in the system is lower than the set level.

Answer 3: The relay is working when the amount of electricity has multiple differences that exceeds the set level

Answer 4: All right

21. What type of relay is High Impedance Relay?

Answer 1: Distance Relay (Distance Relay)

Answer 2: Differential Relay

Answer 3: Reactance Relay

Answer 4: Impedance Relay (Impedance Relay)

5

22. What are the main equipments used to protect the electrical system?

Answer 1: Fuse, Circuit Breaker and Cutout

Answer 2: Fuse, Circuit Breaker and Delay

Answer 3: Fuse, Circuit Breaker and Relay

Answer 4: Circuit Breaker, Cutout and Relay

23. Which of the following device is not the basic equipment for the protection of power system?

Answer 1: Fuse

Answer 2: Relay

Answer 3: Circuit breaker

Answer 4: Magnetic contactors

24. You have Electro-mechanical relay, and you want to use High Speed Relay, what type of relay structure is required for this operation?

Answer 1: Split Ring

Answer 2: Induction Disc

Answer 3: Induction Cup

Answer 4: Attractive Armature

25. Purpose of current transformers (CT) to detect Zero-Sequence is

Answer 1: To prevent circuit from Phase Fault

Answer 2: To protect circuit from Earth Fault

Answer 3: To prevent circuit from under voltage fault

Answer 4: To ensure circuit's Differential Protection

26. Voltage Relay cannot be used

Answer 1: to Check Synchronism

Answer 2: to detect phase reversal

Answer 3: to check the heat abnormalities with Bimetal

Answer 4: as detector to protect the motor while starting the machine.

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**27. Faults detection principle of relays in general, In an electrical systems with good grounding
Relay detects fault at**

Answer 1: Increasing current and increasing pressure

Answer 2: Increased current and reduced pressure

Answer 3: Increased current and increased resistance

Answer 4: Increased current and increased power

28. Which quantities Voltage Restraint Overcurrent Relay Uses?

Answer 1: Use both current and frequency Changed values

Answer 2: Use both voltage and frequency Changed Values

Answer 3: Using both current and voltage Changed Values

Answer 4: Using both current and impedance Changed Values

29. Pressure Relay is used to protect which of the following devices.

Answer 1: Generator

Answer 2: Power insulator transformer

Answer 3: Capacitor

Answer 4: Devices that use SF6 gas as insulation medium.

30. Relay number 46 according to ANSI Standard means which relay?

Answer 1: Negative Sequence Current Relay

Answer 2: Negative Sequence Voltage Relay

Answer 3: Zero Sequence Current Relay

Answer 4: Zero Sequence Voltage Relay

31. Relay number 47 in accordance with ANSI Standard means what kind of relay

Answer 1: Negative Sequence Current Relay

Answer 2: Negative Sequence Voltage Relay

Answer 3: Zero Sequence Current Relay

Answer 4: Zero Sequence Voltage Relay

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32. ANSI Standard Number 21N relays refer to which type of relay.

Answer 1: Ground Fault Over Voltage Relay

Answer 2: Ground Fault Under Voltage Relay

Answer 3: Ground Fault Distance Relay

Answer 4: Ground Fault High Impedance Relay

33. When will the Over-Voltage Relay connect to the "a" type?

Answer 1: Pressure to the set value

Answer 2: The voltage is higher than the set value.

Answer 3: Voltage is lower than the set value

Answer 4: The pressure drops to zero.

34. The main function of Relays is

Answer 1: to direct circuit breaker when Faults occurs.

Answer 2: to break circuit when the Fault occurs.

Answer 3: to detect the position of faults in the electrical system.

Answer 4: to record abnormalities that occur in the electrical system.

35. Equipment used to analyze and process signals in Digital Relays is

Answer 1: Memory Unit

Answer 2: Microprocessor Unit

Answer 3: Analog to Digital Converter

Answer 4: Sample and Hold Device

36. Directional Power Relay (32) used in any of the following cases

Answer 1: Used to detect the direction of power flow.

Answer 2: Used to measure the amount of power

Answer 3: Used in case you want to do Electric System Synchronization

Answer 4: Used to detect overload conditions in electric motors

37. Which of the following technique is not used to detect Earth Fault with Overcurrent Relay?

Answer 1: Positive Sequence Current Detection

Answer 2: Residual Current measurement

Answer 3: Ground Return Current Measurement

Answer 4: Detection of Zero Sequence Current

38. Number 81 relay according to ANSI Standard means what kind of relay

Answer 1: Under Frequency Relay

Answer 2: Over Frequency Relay

Answer 3: Differential Relay

Answer 4: Regulating Relay

39. If you analyze evolution of Relays from the past to the present, what are the different groups?

Answer 1: Electromechanical Relay, Static Relay, Digital Relay and Numerical Relay

Answer 2: Solid-state relay, Static Relay and Digital Relay

Answer 3: Static Relay, Digital Relay and Numerical Relay

Answer 4: Electromechanical Relay, Static Relay and Digital Relay

40. Which of the following types of relays uses Impedance Pick up to allow relay to operate?

Answer 1: Overcurrent Relay

Answer 2: Differential Relay

Answer 3: Distance Relay

Answer 4: Under Voltage Relay

41. Device ID number 52-a according to ANSI Standard it means what kind of device

Answer 1: Auxiliary Contact normally open (Normally Open)

Answer 2: Normally Closed Normally Auxiliary Contact

Answer 3: Normal Auxiliary Relay Open (Normally Open)

Answer 4: Normally Closed Normally Auxiliary Relay

42. Device code 52-b according to ANSI Standard means what kind of device

Answer 1: Auxiliary Contact normally open (Normally Open)

Answer 2: Normally Closed Normally Auxiliary Contact

Answer 3: Normal Auxiliary Relay Open (Normally Open)

Answer 4: Normally Closed Normally Auxiliary Relay

43. Under-Voltage Relay will operate when the voltage is lower than the value set by

Answer 1: The relay will connect the type "a" to each other.

Answer 2: The relay will connect the type "b" to each other.

Answer 3: Relay will separate contact type "a" from each other.

Answer 4: Relay will separate contact type "b" from each other.

44. Which is not the difference between Instantaneous Relay and Inverse Time Relay

Answer 1: Instantaneous Relay has a Hinged Armature structure, but Inverse Time Relay is Induction Type.

Answer 2: Instantaneous Relay has an Armature Attractive structure, but Inverse Time Relay is an Induction Disc.

Answer 3: Instantaneous Relay will run immediately when the Fault current flows through Coil in excess of the set value, but Inverse Time Relay will operate with varying amounts Current

Answer 4: Instantaneous Relay is easier to create than Inverse Time Relay.

45. From the following message Which is correct

A. Solid State Relay is a relay that has no moving parts.

B. Solid State Relay is a relay that does not require electricity from the outside.

C. Microprocessor Relay is a relay that can perform many functions in one.

D. Microprocessor Relay is a relay with a complex internal circuit structure.

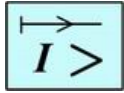
Answer 1: Article A and C

Answer 2: Article A and D

Answer 3: B and C

Answer 4: B and D

46. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



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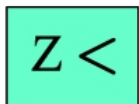
Answer 1: Instantaneous Overcurrent Relay

Answer 2: Differential Relay

Answer 3: Definite Time Earth Fault Overcurrent Relay

Answer 4: Directional Overcurrent Relay

47. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



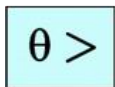
Answer 1: Distance Relay

Answer 2: Under speed Relay

Answer 3: Underpower Relay

Answer 4: Phase Angle Relay

48. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



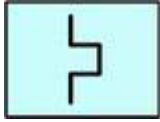
Answer 1: Overspeed Relay

Answer 2: Power Factor Relay

Answer 3: Overtemperature Relay

Answer 4: Phase Angle Relay

49. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown What device does it mean?



Answer 1: Directional Relay

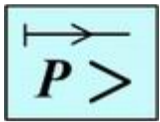
Answer 2: Switch

Answer 3: Circuit Breaker

Answer 4: Thermal Relay

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50. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



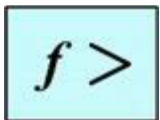
Answer 1: Phase Angle Relay

Answer 2: Directional Overpower Relay

Answer 3: Power Factor Relay

Answer 4: Revers-Phase Relay

51. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



Answer 1: Overspeed Relay

Answer 2: Under speed Relay

Answer 3: Over frequency Relay

Answer 4: Phase Angle Relay

52. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



Answer 1: Under speed relay

Answer 2: Underfrequency relay

Answer 3: Underpower relay

Answer 4: Undervoltage relay

53. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



Answer 1: Directional Overcurrent Relay

Answer 2: Definite Time Overcurrent Relay

Answer 3: Negative Sequence Relay

Answer 4: Inverse Time Overcurrent Relay

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54. Which of the following relays uses Impedance as a Pick-up quantity?

Answer 1: Relay Number 67

Answer 2: Relay Number 87

Answer 3: Relay number 27

Answer 4: Relay Number 21

55. Which of the following relays Relying on the current stimulation that comes from CT as pick up quantity?

Answer 1: Relay number 50

Answer 2: Relay Number 67

Answer 3: Relay number 27

Answer 4: Relay Number 21

56. The mechanism of digital relays

Answer 1: Depending on the signal data received from the ADC

Answer 2: Depending on the order from the software used

Answer 3: Depending on the memory

Answer 4: Depending on the input and display section

57. Which of the following relays have Adjustable Logic Elements?

Answer 1: Electromagnetic induction relays

Answer 2: Electromagnetic suction relays

Answer 3: Plunger Relays

Answer 4: Static Relays

58. Over Load Relay with Bimetal, how does it work?

Answer 1: Use the principles of different metals. When receiving heat simultaneously, the growth rate is not equal.

Answer 2: Use the magnetic field principle of the contactor Through metal plates

Answer 3: Using the principles of different metals When not being heated simultaneously, the rate of contraction is not equal

Answer 4: Use the principle of electromagnetic fields to induce the metal sheet to open - close the contactor face.

59. The principle of Relaying Pilot is

Answer 1: Use to protect the generator.

Answer 2: Use to protect the transformer

Answer 3: To protect the power transmission line

Answer 4: To protect the electric motor

60. Within the structure of the relay model Microprocessor or Digital Relays that are used in modern times. Need to have a Multiplexer (MUX) to

Answer 1: Use the noise filter before entering the ADC device.

Answer 2: Use to select and sort the signal before entering the ADC device.

Answer 3: Use to expand the signal size before entering the ADC device.

Answer 4: Use as a clock signal builder within the relay.

61. Which of the following relay groups Must be used with both CT and VT measuring devices?

Answer 1: Relay Number 50 and Relay Number 51

Answer 2: Relay number 25 and Number 67N relay

Answer 3: Relay Number 32 and Relay Number 21

Answer 4: Relay Number 51 and Relay Number 27

62. Incomplete Sequence Relay (48) is

Answer 1: Use to protect the generator.

Answer 2: Use to protect the transformer

Answer 3: Use to protect the power transmission line

Answer 4: Use to protect the electric motor

63. From the following message Which is correct?

A) 59-Overvoltage Relay and 27-Undervoltage Relay used to protect the voltage in the electrical system.

B) 25-Synchronism Relay Use to check the frequency And the phase angle of the voltage in two circuits that will be connected in parallel

C) 59 Overvoltage Relay and 81-Undervoltage Relay used to protect the frequency in the wrong electrical system.

D) 21-Distance Relay and 87-Differential Relay to protect transformer equipment in electrical systems

Answer 1: Article A and B

Answer 2: Article A and C

Answer 3: B and C

Answer 4: Article C and D

64. Which of the following codes and device names are all right?

Answer 1: 49-Frequency Relay, 50-Instantaneous Overcurrent Relay, 67-Undervoltage Relay

Answer 2: 21-Distance Relay, 50-Instantaneous Overcurrent Relay, 51-Time Overcurrent Relay

Answer 3: 40-Loss of Excitation Relay, 59-Overvoltage Relay, 78-Differential Relay

Answer 4: 50-Time Overcurrent Relay, 51-Instantaneous Overcurrent Relay, 87-Differential Relay

65. Which of the following codes and device names are all right?

Answer 1: 27-Overvoltage Relay, 51-Time Overcurrent Relay, 59-Undervoltage Relay

Answer 2: 27-Overvoltage Relay, 51-Undervoltage Relay, 59-Time Overcurrent Relay

Answer 3: 27-Undervoltage Relay, 51-Time Overcurrent Relay, 59-Overvoltage Relay

Answer 4: 27-Undervoltage Relay, 51-Overvoltage Relay, 59-Time Overcurrent Relay

66. Which of the following codes and device names are incorrect?

Answer 1: 21-Distance Relay, 40-Loss of Excitation Relay, 59-Overvoltage Relay

Answer 2: 32-Power Direction Relay, 60V-Voltage Balance Relay, 87-Differential Relay

Answer 3: 27-Undervoltage Relay, 37-Undercurrent Relay, 78-Out of Step relay

Answer 4: 49-Frequency Relay, 50-Instantaneous Overcurrent Relay, 51-Time Overcurrent Relay

67. Which of the following relay groups operational with VT only?

Answer 1: Relay number 50 and relay number 87

Answer 2: Relay Number 51 and Relay Number 67

Answer 3: Relay Number 25 and Relay Number 27

Answer 4: Relay Number 81 and Relay Number 21

68. Which of the following relay groups operational with CT only?

Answer 1: Relay number 50 and relay number 87

Answer 2: Number 21 relay and Number 67N relay

Answer 3: Relay Number 25 and Relay Number 27

Answer 4: Relay Number 51 and Relay Number 59

69. The principle of harmonic detection in relays with the Harmonics Restraint function is

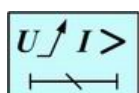
Answer 1: used to prevent the relay trip when there are faults occurring outside the protection zone.

Answer 2: used to prevent the relay of the relay in Abnormal Conditions but not in the protection zone.

Answer 3: use to prevent the order of the relay in the overlap of other defensive zones so that the relays in that protective zone first

Answer 4: Use to order a circuit breaker when the relay detects the number of harmonics beyond the set value.

70. According to IEC 60617 (IEC Relay Symbols) symbol of relay as shown Means



Answer 1: Phase Angle Relay

Answer 2: Voltage Restrained / Controlled Overcurrent Relay

Answer 3: Revers-Phase Relay

Answer 4: Directional Overcurrent Relay

71. Equipment code number 25 in accordance with ANSI Standard, means which device

Answer 1: Thermally Operated Circuit Breaker

Answer 2: Relay Operated Circuit Breaker

Answer 3: Synchronizing or Synchronism-Check Device

Answer 4: Over Voltage Relay

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72. Which of the following describes the principle of preventing overcurrent?

Answer 1: Over current relay is the most used relay in Phase Faults and Earth Faults protection.

Answer 2: The amount used to detect the Fault in the system may be used as current, time, or both current and time

Answer 3: The amount used to detect the Fault in the system may be used as current, voltage or time.

Answer 4: Short circuit protection must always be set to the closest relay to the Fault.

73. Discrimination Of the relay in the overcurrent protection system Which method is use?

Answer 1: 2 Quantities method is by using current and time.

Answer 2: 2 Quantities method is using current and phase angle

Answer 3: 3 Quantities methods: using current, time and using both current and time

Answer 4: 3 Quantities method is by using current, time and phase angle.

74. What are the characteristics of the definite time overcurrent relay over current relay?

Answer 1: The relay will operate. Whenever detecting the Fault current exceeds the normal continuous current value and having the fastest working time, almost immediately

Answer 2: The relay will operate. When detecting that the Fault current exceeds the continuous current value and have a fixed working time according to the designed value

Answer 3: The relay will operate. When detecting that the Fault current exceeds the continuous current value and there is a time to work as an inversely proportional to the amount of fault current

Answer 4: The relay will operate. When detecting that the Fault current exceeds the current value and has a variable working time according to the amount of faulty currents

75. What are the characteristics of the definite current overcurrent relay overcurrent relay?

Answer 1: The relay will work. When detecting that the Fault current is equal to or exceeds the set current value and there is a time to work as an inversely proportional to the amount of current

Answer 2: The relay will work. When detecting that the Fault current is equal to or exceeds the set current value and has a variable working time according to the amount of faulty currents

Answer 3: The relay will work. When detecting that the Fault current is equal to or exceeds the set current value the relay will work immediately, not depending on the current value.

Answer 4: The relay will work. When detecting that the Fault current is equal to or exceeds the set current value the relay will work with a fixed delay time according to the set value.

76. What is the characteristic of the Inverse Time Overcurrent Relay?

Answer 1: The relay will work. When detecting the measured impedance is less than the set value then relay will work immediately at the beginning. and the faster the operation is, if the impedance is less.

Answer 2: The relay will work. When detecting that the Fault current exceeds the current value Then relay will work immediately at the beginning. And the faster the operation is, if the current is less

Answer 3: The relay will work. When detecting that the Fault current exceeds the current value, and has a variable working time according to the amount of faulty currents

Answer 4: The relay will work. When detecting that the Fault current exceeds the current value and there is a time to work as an inversely proportional to the amount of current

77. Directional overload relay detects Faults by

Answer 1: Level measurement

Answer 2: Comparison of phase angle

Answer 3: Comparison of current differences

Answer 4: Harmonic detection

78. Grading Margin depends on which of the following factors

Answer 1: Overshoot time of relay

Answer 2: Device error

Answer 3: Circuit Breaker Time of Circuit Breaker

Answer 4: All right

79. Which is not an important factor in determining the time value of grading margins for the working time sequence of overcurrent relay

Answer 1: Circuit Breaker Time of Circuit Breaker

Answer 2: Overshoot Time of Relay

Answer 3: Allowance for errors

Answer 4: The duration of the short-circuit current

80. What are the meanings of "overcurrent" in electrical protection?

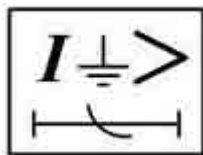
Answer 1: There are 2 characteristics, Short Circuits and Inrush Current.

Answer 2: There are 2 characteristics, Short Circuits and Interrupting Current.

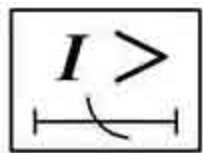
Answer 3: There are 2 styles, Short Circuits and Over Load.

Answer 4: There are 3 styles: Short Circuits, Over Load and Transient.

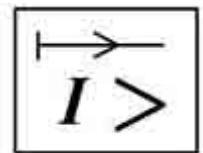
81. What is the symbol of "Instantaneous Overcurrent Relay" according to IEC (IEC Symbols)?



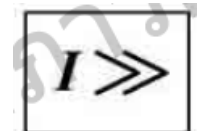
Answer 1:



Answer 2:

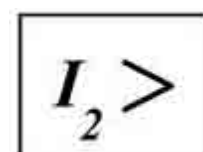


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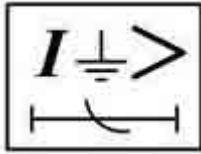


Answer 4:

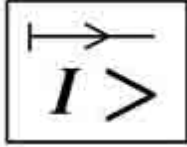
82. What is the symbol of "Inverse Time Overcurrent Relay" according to IEC (IEC Symbols)?



Answer 1:



Answer 2:

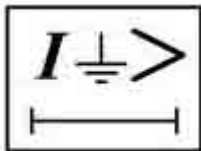


Answer 3:

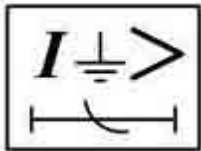


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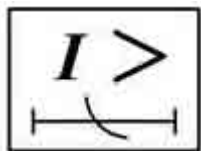
83. The symbol of "Inverse Time Earth Fault Overcurrent Relay" in accordance with IEC standards (IEC Symbols) is?



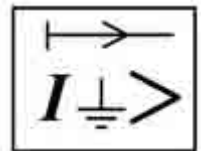
Answer 1:



Answer 2:

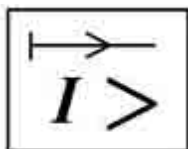


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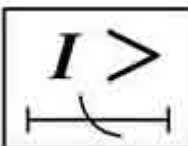


Answer 4:

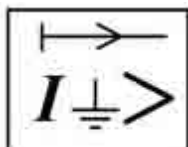
84. What is the symbol of "Phase-Directional Overcurrent Relay" according to IEC (IEC Symbols)?



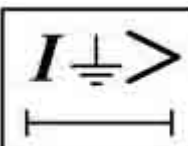
Answer 1:



Answer 2:

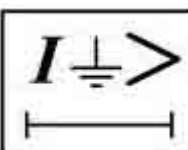


Answer 3:

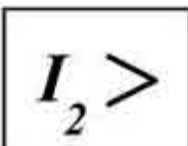


Answer 4:

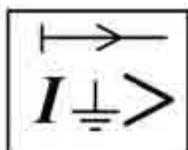
85. What is the "Ground-Directional Overcurrent Relay" symbol in IEC Standard?



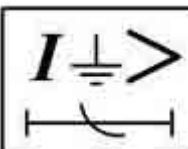
Answer 1:



Answer 2:



Answer 3:



Answer 4:

86. One power system has a maximum short circuit current of 8,000 A. Use an overcurrent relay to protect by passing the current transformer (CT) with a test

rate of 500/5 A to calculate Plug Setting Multiplier (PSM) value? When adjusting the current to 150%

Answer 1: 6.0

Answer 2: 8.76

Answer 3: 9.56

Answer 4: 10.67

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87. What are the working conditions of Directional Overcurrent Relay?

Answer 1: When the current at the relay is visible Greater than or equal to the adjusted current value Relay will work

Answer 2: When the current at the relay is visible Greater than or equal to the adjusted current value and have the right direction Relay will work

Answer 3: When the current of the relay is visible Greater than or equal to the adjusted current value and have the opposite direction Relay will work

Answer 4: When the current at the relay is visible Less than or equal to the adjusted current value and have the right direction Relay will work

88. Phase Directional Overcurrent Relay and Ground Directional Overcurrent Relay according to IEEE C37.2 (ANSI Device Numbers) means relay with number

Answer 1: 67 and 67N

Answer 2: 51 and 51N

Answer 3: 50 and 50N

Answer 4: 32 and 32N

89. Phase Directional Overcurrent Relay What kind of connection can be used?

Answer 1: 30-degree connection

Answer 2: 60-degree connection

Answer 3: 90-degree connection

Answer 4: All right

90. Directional Overcurrent Relay can use which quantity as a Polarizing Quantity.

Answer 1: voltage

Answer 2: electricity

Answer 3: pressure or electricity, depending on the case of protection.

Answer 4: electrical frequency

91. Directional Overcurrent Relay, which amount is the Operating Quantity

Answer 1: voltage

Answer 2: Current

Answer 3: both voltage and current, as the case of protection.

Answer 4: electrical frequency

92. Phase Directional Overcurrent Relay (67) For Phase Faults protection, Which quantity is required as a Polarizing Quantity

Answer 1: Use only voltage.

Answer 2: Use current only

Answer 3: Can use both voltage and current, as the case of protection.

Answer 4: Use only electrical frequencies. Use only electrical frequencies

93. Polarizing Quantity of Directional Overcurrent Relays define as

Answer 1: It is a reference quantity for comparing the size and direction of the current. In order for the relay to work

Answer 2: It is a reference quantity for comparing the size of the over current. In order for the relay to work

Answer 3: It is a reference quantity for comparing the direction of the current. In order for the relay to work

Answer 4: is the amount of current compared to the current value set in percentage in order for the relay to work

94. Overcurrent Relay, connected to circuit through current transformer (CT) with Current Ratio of 800/5 A, set to run at 80%. What is the starting current of the relay?

Answer 1: 5 A

Answer 2: 4 A

Answer 3: 3 A

Answer 4: 2.5 A

95. Overcurrent Relay, connected to circuit through the current transformer (CT) with current ratio of 1000/1 A, set to run at 125%. What is the starting current of the relay?

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Answer 1: 2.0 A

Answer 2: 1.5 A

Answer 3: 1.25 A

Answer 4: 1.0 A

96. Overcurrent Relay, connected to circuit through the current transformer (CT) with Current Ratio of 1000/5 A, set to run at 100%. If the Fault Current is 10,000 A, find the PSM value

Answer 1: PSM = 5

Answer 2: PSM = 10

Answer 3: PSM = 15

Answer 4: PSM = 20

97. In the 3-phase 3-wire electrical system, Earth Fault Protection with the "Residual Connected" method requires how many current transformers (CT)

Answer 1: Use only one CT.

Answer 2: Using 2 CT

Answer 3: Use 3 CT.

Answer 4: Use all 4 CTs.

98. Earth Fault Protection of 3-phase generators that are grounded by Ground Return method. How many current transformers (CT) are required?

Answer 1: Use all 4 CTs.

Answer 2: Use 3 CT

Answer 3: Using 2 CT

Answer 4: Use only one CT.

99. High Setting Instantaneous Overcurrent protection device's number relay is

Answer 1: 50

Answer 2: 51

Answer 3: 32

100. To adjust the current setting of the Overcurrent Relay, it must be adjusted at the Plug Setting which is available in 7 Tap, ie 50%, 75%, 100%, 125%, 150%, 175%, 200%.

Which will be current rate of 1000/5 A CT. If Plug Setting is 150%, CT will deliver

Answer 1: 5.0 A

Answer 2: 6.25 A

Answer 3: 7.5 A

Answer 4: 8.75 A

101. Dual Polarizing Earth-Fault Relay fault protection relay is not intended to solve any problems, because

Answer 1: Residual Voltage is too low.

Answer 2: Too many Phase Shift angles

Answer 3: The residual current value is too low.

Answer 4: Residual Voltage and Residual Current values are too low.

102. Which of the following devices do Not need Directional Overcurrent protection?

Answer 1: Induction Motor

Answer 2: Ring Main

Answer 3: Parallel Source without Transformer

Answer 4: Parallel Source with Transformer

103. What is Plug Setting Multiplier (PSM)?

Answer 1: Reducing factor for setting the value of overcurrent relay to allow the relay to run faster

Answer 2: The current value in the circuit that needs protection is the number of times the normal continuous current.

Answer 3: The voltage setting value is the number of voltage coordinates of VT to allow the overcurrent relay to work

Answer 4: Multiplier for adjusting the current relay for work safety

104. What is Time Multiplier Setting (TMS)?

Answer 1: Reduction factor for adjusting the working time of the overload relay. To allow the relay to run faster

Answer 2: The reserve factor for adjusting the working time of the overload relay For work safety

Answer 3: Working time multiplier of overcurrent relay for determining the actual working time of a relay at a certain value of PSM

Answer 4: Time allowance for adjusting the working time of the overcurrent relay to work together

105. What is Grading Margin?

Answer 1: Reduction factor for adjusting the working time of the overload relay. To allow the relay to run faster

Answer 2: The reserve factor for adjusting the working time of the overload relay for work safety

Answer 3: Working time multiplier of overcurrent relay for determining the actual working time of a relay at a certain value of PSM

Answer 4: The difference in the minimum working time for the timing of the main current overload relay with overload current relay

106. Overcurrent Relay, connected to circuit through the current transformer (CT) with Ratio of 1000/5 A, set to run at 125%. If the Fault Current is 15,000 A, find the PSM value.

how much

Answer 1: PSM = 20

Answer 2: PSM = 15

Answer 3: PSM = 12

Answer 4: PSM = 10

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107. In any of the following cases, the Overcurrent Relay used for

Answer 1: Protection of overload conditions in an induction motor

Answer 2: Protection of Locked Rotor conditions in an induction motor

Answer 3: Overheating protection in the stator coil of the electric motor

Answer 4: Over flux protection in the transformer

108. Which of the mentioned use of Overcurrent Relay is wrong?

Answer 1: Overcurrent Relay is used to prevent short circuit only.

Answer 2: Overcurrent Relay can prevent both short circuit and overload conditions in electrical equipment.

Answer 3: Overcurrent Relay has better protection properties than fuses.

109. Which of the following Can be used as a Polarizing Quantity of Directional Overcurrent Relay?

Answer 1: Real Power

Answer 2: Voltage

Answer 3: Frequency

Answer 4: Power Factor

110. Which is not the Directional Overcurrent Relay working condition?

Answer 1: When the current value is greater than the value of Pick up

Answer 2: When the direction of the current exceeds the limit given to the relay

Answer 3: When the Power Factor angle value is higher than the set value

Answer 4: All right

111. Phase Directional Overcurrent Relay with 90-degree connection - 45 degrees MTA, considering phase relays the relay will correct Correctional

Tripping Zone, when the phase A phase has an angle

Answer 1: From 45 degrees leading to 90 degrees Lagging

Answer 2: From 45 degrees Leading to 135 degrees Lagging

Answer 3: From 45 degrees Lagging to 135 degrees Leading

Answer 4: From 0 degrees to 180 degrees Lagging

112. What is the current overload protection Discrimination system?

Answer 1: It is set to allow relays in many systems. Work group by allowing the same type of relay to work simultaneously

Answer 2: It is a sequence of protection. By allowing relays that are near the source to work first and a remote relay to act as a backup

Answer 3: It is set to allow relays in many systems. Coordinate By allowing relays that are far from the most paid source to work first and relays that are in the position near the source, work in the next order without the need for grading margins.

Answer 4: It is a sequence of protection. By allowing the main relay (Primary Relay) near the point of short circuit to work first and the backup relay that is far away has Grading margin is long enough to ensure that the backup relays are secure (Secure)

113. Very Inverse Overcurrent Relay has the following settings: Time Multiplier Setting (TMS) = 0.3, CT Ratio = 1000/1 A by adjusting the current to 100%, if the Fault current occurs 10,000 A then Calculate tripping time.

Answer 1: 0.24 seconds

Answer 2: 0.45 seconds

Answer 3: 0.90 seconds

Answer 4: 4.00 seconds

114. Over current relays have a Standard Inverse operation (SI) [IEC 60255] with a TMS setting of 0.5. If using the CT Ratio 800/5 A and adjusting the current to 100% The fault current is equal to 5,000 A. The relay's tripping time is

Answer 1: 0.500 seconds

Answer 2: 1.875 seconds

Answer 3: 0.945 seconds

Answer 4: 3.750 seconds

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115. Over current relays with Very Inverse operation (VI) [IEC 60255] by setting TMS to 0.6 if using CT Ratio 600/5 A and adjusting the current to 100% when occurring the fault current is equal to 4,000 A. Relay's tripping time is

Answer 1: 1.429 seconds

Answer 2: 2.025 seconds

Answer 3: 2.382 seconds

Answer 4: 3.375 seconds

Answer Key

Question	Answer	Question	Answer	Question	Answer
1	2	31	2	61	3
2	4	32	3	62	4
3	2	33	2	63	1
4	1	34	2	64	2
5	4	35	2	65	3
6	3	36	1	66	4
7	4	37	1	67	3
8	3	38	2	68	1
9	1	39	1	69	2
10	2	40	3	70	2
11	4	41	1	71	3
12	4	42	2	72	2
13	1	43	2	73	3
14	3	44	4	74	2
15	2	45	1	75	3
16	1	46	4	76	4
17	2	47	1	77	1
18	4	48	3	78	4
19	1	49	4	79	4
20	1	50	2	80	3
21	2	51	3	81	4
22	3	52	4	82	2
23	4	53	3	83	2
24	4	54	4	84	2
25	2	55	1	85	1
26	3	56	2	86	4
27	2	57	4	87	2
28	3	58	1	88	1
29	2	59	3	89	4
30	1	60	2	90	1
91	2	92	2	93	3
94	2	95	3	96	1
97	3	98	4	99	1
100	3	101	2	102	1
103	2	104	3	105	4

106	3	107	4	108	1
109	2	110	3	111	2
112	4	113	2	114	2
115	1				